

## CLAIMS

1. A method for the detection of leaks in a heat exchanger having discrete flow paths for working fluid and heat exchange fluid, respectively, the method comprising introduction of a detection fluid within one of said flow paths, passing the detection fluid in different directions in said one flow path, and detecting any detection fluid which has leaked from said one flow path to said other flow path.
2. A method according to claim 1, in which a detection fluid is introduced in one flow path and air is allowed to flow through the other flow path.
3. A method according to claim 1 or claim 2, in which the one flow path in which the detection fluid is introduced is the heat exchange fluid path, the detection of leaked detection fluid taking place in the working fluid flow path.
4. A method according to any preceding claim, in which the detection fluid is a gas comprising helium and the pressure in one flow path is higher than the other flow path.
5. A method according to claim 4, in which the gas comprising helium is a mixture of helium and air in a concentration of 96-98% helium.
6. A method according to claim 4 or claim 5, including the step of introducing a fluorescent dye into one of said flow paths and allowing the dye to become distributed throughout said flow path and, thereafter, inspecting the heat exchanger from the other side from that which defines said flow path with fluorescent-responsive detection means to identify the source of a leak.
7. A method according to any of claims 1 to 3, in which the detection fluid comprises a fluorescent dye.
8. A method according to claim 7, in which the fluorescent dye is detected using a fluorescent-responsive detection means.
9. A method according to any one of claims 6 to 8, the heat exchanger being a plate pack heat exchanger, in which the heat exchanger is disassembled following the dye distribution step, whereby the inspecting step is carried out on individual plates.